IN THE CLAIMS:

1.-12. (Canceled)

13. (Previously Presented) A method, comprising:

forming a metal region above a substrate, said metal region comprising a first surface portion and a second surface portion opposite to said first surface portion;

forming a cap layer on said first surface portion;

implanting a diffusion rate reducing material into said metal region; and

removing at least a portion of said cap layer after the implantation of said diffusion rate reducing material.

14. (Original) The method of claim 13, further comprising adjusting implantation parameters on the basis of a material composition of said metal region and said cap layer and on the basis of a thickness of said cap layer so as to locate a peak concentration within said metal region of said diffusion rate reducing material within approximately 20 nm of an interface formed by said first surface portion and said cap layer.

15. (Original) The method of claim 14, wherein said implantation parameters are selected so as to locate said peak concentration within a distance of approximately 10 nm from said interface.

16. (Original) The method of claim 13, wherein said metal region comprises copper.

17. (Original) The method of claim 13, further comprising forming a second cap layer on said cap layer after the implantation of said diffusion rate reducing material.

18. (Canceled)

19. (Currently Amended) The method of ~~claim 1~~ claim 13, further comprising forming a second cap layer after removal of at least a portion of said cap layer.

20. (Original) The method of claim 13, wherein said diffusion rate reducing material is a dielectric material.

21. (Original) The method of claim 20, wherein said dielectric material comprises a material contained in said cap layer.

22. (Previously Presented) A method, comprising:

forming a metal region above a substrate, said metal region comprising a first surface portion and a second surface portion opposite to said first surface portion;

forming a cap layer on said first surface portion;

implanting a diffusion rate reducing material into said metal region; and

adjusting implantation parameters on the basis of a material composition of said metal region and said cap layer and on the basis of a thickness of said cap layer so as to locate a peak concentration within said metal region of said diffusion rate

reducing material within approximately 20 nm of an interface formed by said first surface portion and said cap layer.

23. (Previously Presented) The method of claim 22, wherein said implantation parameters are selected so as to locate said peak concentration within a distance of approximately 10 nm from said interface.

24. (Previously Presented) A method, comprising:

forming a metal region above a substrate, said metal region comprising a first surface portion and a second surface portion opposite to said first surface portion;

forming a cap layer on said first surface portion; and

implanting a diffusion rate reducing material into said metal region, wherein said diffusion rate reducing material is a dielectric material.

25. (Previously Presented) The method of claim 24, wherein said dielectric material comprises a material contained in said cap layer.